நமது வனம்

NAMATHU VANAM

(A Quarterly e-magazine of TASPEF)

May 2025 - July 2025

(For free circulation only)

Trek to Mukurthi Peak, Nilgiris

NAMATHU VANAM

May 2025 - July 2025

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TAMILNADU ASSOCIATION OF SENIOR PROFESSIONALS
OF ENVIRONMENT AND FORESTS
(TASPEF)

நமது வனம்

"காலின்றி அமையாது நீரும்
நீரின்றி அமையாது உலகும்"

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Birthday Wishes

TASPEF wishes all the members who are celebrating their birthday in the months of May, June and July 2025

"A VERY HAPPY BIRTHDAY"

EDITORIAL

Enchanting Tamil Nadu

Our State of Tamil Nadu has a unique geographical identity. It has both the Eastern and Western Ghats with their vast and diverse ecosystems. Termed by our ancestors as "Mullai" Lands, these Ghats are the catchment areas for many of east flowing rivers irrigating the State's plains delta. For thousands of years they have supported cultivated lands termed as the "Marutham". Adding to this is our Coromandel coast in the "Bay of Bengal" with its unique marine ecosystem. They are the "Neithal" Lands. Though, in true sense Tamil Nadu does not have deserts, but in certain arid pockets, which get deposits of sand on huge tracts of lands, due to actions of the south-west monsoon winds, have been termed as "Palai" or desert lands. Such is the wisdom of our ancestors.

Tamils had established land classifications over many centuries ago! Further, its culture and literature have given birth to many epics, arts, dance forms, crafts and timeless temples, each with its own styles-like the predominant Chola architecture, Pallava style of stone marvels and the Nayaka Styled Temples. In Pudukottai district the older forms of temple architecture, predating even Cholas can be seen even today in the Narthamalai hills.

Therefore, the Government of Tamil Nadu brought out the theme "Enchanting Tamil Nadu" to bring out and showcase these wonders to the larger world and monetise the heritage for the betterment of Tamil citizens.

Tamil Nadu Infrastructure Fund Management Corporation

In tandem with the Tamil Nadu government's "Enchanting Tamil Nadu" policy, the Government of Tamil Nadu established the Tamil Nadu Infrastructure Fund Management Corporation (TNIFMC) : a professional Investment Management Company registered under the SEBI's Alternate Investment Funds (AIF) Regulations. In turn, TNIFMC promoted the Tamil Nadu Wilderness Experiences Corporation (TNWEC) with an objective of promoting sustainable eco-tourism in Tamil Nadu.

Initially, under the TNIFMC, wherein, the government of Tamil Nadu is the anchor investor, managed the TNWEC. TNIFMC initiated actions to promote ecotourism in eight enchanting locations. Due care was

taken to select lesser-known sites, to reduce the negative impact of mass tourism on the popular tourism sites. Detailed Project Report (DPR) was prepared for these eight ecotourism sites. To professionally manage Ecotourism, Tamil Nadu Wilderness Experiences Corporation was formed with share capital from Tamil Nadu Forest Department, Tamil Nadu Infrastructure Development Board (TNIDB), Government of Tamil Nadu and the TNIFMC.

Subsequently, the TNWEC was transferred to the full control of the Tamil Nadu Forest Department. Currently, TNWEC is doing a phenomenal work in promoting adventure sports, i.e., trekking. The "Trek Tamil Nadu" initiative is a great success as a part of ecotourism promotion.

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Ecotourism is a Forestry Activity

Ecotourism is defined as "responsible travel to natural areas that conserves the environment and improves the well-being of local people". Recognising the importance of ecotourism as a powerful tool for conservation of forests, landscapes of exceptional scenic value and wildlife- both fauna and flora, the Government of India Ministry of Environment, Forest and Climate Change (Forest Conservation Division) in their reference File No.5-2/2017-FC-Part(1) have amended the Para 11.10 of the Handbook of Forest (Conservation) Act, 1980, paving the way for implementation of ecotourism in forests and other areas.

The amendment is:

"Development/construction of facilities which are not of permanent nature, in forest areas for the purpose of ecotourism by Government authorities shall not be considered as non-forestry activity for the purpose of Forest (Conservation) Act, 1980."

Can we expect the "Trek Tamil Nadu" to become "Trek & Camp Tamil Nadu"?

This amendment has enabled Forest Departments, across the country to undertake ecotourism in forest areas, which was not feasible before this amendment. This is a positive step towards legal and inclusive action towards realisation of full potential of natural sites and create wealth for the benefit of local dependant inhabitants and awareness creation on the need to conserve the ecological richness of the sites so developed. Added advantage is that the frontline staff are more active and interact with the local and tourist community helping the staff to better understand their role in the conservation of forest wealth under their protection. Simultaneously promoting skills in creating awareness among the other stakeholders and public on the need for conservation and protection of our Forests and Wildlife. Recently the Honourable Chief Minister released a statement, highlighting achievements made in 40 designated trekking spots, where the foot fall in the past three months alone is 4792 generating a revenue of Rs. 63.43 lakhs out of which Rs. 49.51 lakhs went as income to tribal youth trekking guides.

Hope that, the Tamil Nadu Wilderness Experiences Corporation will expand its role and responsibilities from "Trek Tamil Nadu" in to "Trek and Camp Tamil Nadu utilizing the advantages of the amendment to the Forest Conservation Act 1980. I request our members to throw more light on nuances of utilising the eco-tourism as a tool for sustainable conservation.

Warm regards,
V. Prabhakaran, IFS(Retd),
Editor,
Namthu Vanam

REMINICENSES OF A FORESTER
SOME SNIPPETS - Part 2

Dr. T. Sekar, IFS (R)
Formerly Principal Chief Conservator of Forests, Tamil Nadu

Learnt and forgotten – My tenure in Tiruchy Territorial Division

A year into the fieldwork in the State, I used to wonder as to how much the forestry knowledge gained through 22 months' long intensive training at the Indian Forest College (IFC), Dehra Dun (present day Indira Gandhi National Forest Academy) will be tested to use in Tamil Nadu. Much of our exposure during our stay there was predominated by the forest types, silvicultural systems, mensuration and forest management principles, plantation forestry prevailing in the north, west and central India- albeit our brief field tours to the forests of Southern India that extended for a month. South India tour provided me some understanding of forest working obtained at Tamil Nadu at that point of time.

As I landed in my first Division posting as District Forest Officer of Tiruchirappalli Territorial Forest Division in June 1986, I was recapitulating some of the silvicultural systems and their principles learnt at IFC and tried to relate to the forest utilization and management and reforestation programmes which were practiced in the division. The southern tropical thorn forests and Umbrella thorn forests occupy the foothills and lower slopes of Manappaarai, Thuraiyur and Perambalur hills, while southern dry mixed deciduous forests cover upper slopes and the plateaus of Pachamalai. Riverine vegetation dominates the jungle stream and rivulet margins in the upper plateau. Significant extent of plain forests containing southern thorn scrub also is part of the Division. The Pachamalai hills covering Thuraiyur and Perambalur Forest Ranges were rich in sandal.

As for sandal, compartments of different series were worked on a three - year felling cycle. No rotation age or felling girth at breast height was prescribed for harvesting the species in the working circle. Working Plan prescription as regards its extraction was to mark only the dead trees of sandal, irrespective of girth or age and extract the entire tree including the roots. Cutting of climbers, bush sowing of sandal seeds, fire protection in sandal coupes were other miscellaneous prescriptions for improving and augmenting the growing stock.

The afforestation programme included planting of hybrid Eucalyptus and cashew, the two cash crops mainly in the plain forests of Tiruchy Range that were containing sparse natural scrub vegetation. Then there was another major scheme namely 'Reforestation of Degraded Forests' operating in the lower slopes of Manapparai, Thuraiyur and Permabalur Ranges. The objective of the scheme was to quickly restock the poorly regenerated erstwhile fuel coupes with quick growing species besides certain Minor Forest Produce species. The method adopted was to clear the existing stock of so-called unwanted vegetation growth after marking the timber and MFP yielding trees for retention.

Fuel working in forests

It will be useful to provide an insight to the readers about a system of forest utilization prevalent in the then Madras Presidency and later on in the state of Tamil Nadu since the inception of forest working plans in early 1900s. It was termed 'fuel working circles', the

object of which was to maintain a steady supply of fuelwood for the towns and cities. The forest areas were demarcated into fuel series and compartments, with each compartment worked in a cycle of 30-40 years. The silvicultural system followed was either simple coppice system or coppice with standards. The underlying principle was that most of the fuel species that were good coppicers would regenerate naturally through the coppice shoots and attain tree forms within thirty years. But that didn't happen in most divisions. With the prevailing system of allowing the contractor to fell and remove only the useful species, the percentage of valuable species tended to reduce at each coppice felling. Due to gradual mortality of coppice stools, the softwood and other useless species invaded the ground more and more, thus displacing the useful ones to an increasing degree. Such of the coppice shoots standing under the shade of unwanted species got suppressed and didn't get a chance to grow vigorously at all.

Unwanted species like Euphorbia, softwoods, Portium, etc were left unfelled with the result the area after every felling got more and more filled with useless species like *Euphorbias, Gyrocarpus, Pterolobium, Prosopis* and the thorny creepers and climbers like *Acacia intsia, Caesalpinia mimosoides* etc. Resultant growth in many areas was found to be far more inferior. Where coppice regrowth was inadequate, the coupes were either brought under rab system or kumri system of regeneration with partial success in some areas.

In the reorganised state of Tamil Nadu, with the demand for fuel wood persisting, working of fuel forests was continued under the system of simple coppice. With the launch of Five Year Plans (FYP), there was a boost to the plantation forestry and large chunk of the old fuel coupes in a degraded state were brought under various Plantation Working Circles. Size able allocations were made in every FYP and in the Annual Plans of Operation for raising fuel, cashew, pulpwood, softwood, Minor Forest Produce etc plantations, which aimed to bring those areas under some productive management system. Up to 1966, an extent of 1,77,931 ha of plantations of various species were raised in the forest divisions across the State.

Ban on fuel felling

The system of fuel working caused striking levels of degradation of the forest cover in the State over few rotations of felling. The poverty of regrowth in such worked areas across the state led to a thinking of imposing restrictions on the working of fuel coupes in the natural forests. Better sense prevailed. On the basis of proposals from Chief Conservator of Forests, Government in G.O.Ms. No. 1375 Forests and Fisheries Department dated 23.10.1980, Government imposed a ban on clear felling of natural forests. That was a watershed year in TN forestry and the working of fuel forests ceased.

Operation 'Fuel Coupes' in the New Avtar-Forests Clean shaved

The need for quickly restocking the poorly regenerated fuel coupes was felt, and a scheme of reforestation of degraded forests in the former fuel coupes for raising miscellaneous/MFP plantations was given a thrust under the aegis of FYPs. The method adopted was to clearfell the area of 'so-called' unwanted and useless growth in the surveyed areas after marking all timber, MFP and sandal trees for retention and plant up with container plants of useful species. The preliminary departmental working of the area provided for clearing and uprootal of all the existing light, medium or heavy useless growth, for which rates were provided in the Forest Schedule of Rates (FSR). Forest staff looked for picking up heavy growth area as that would provide them with better FSR, besides giving the petty

contractor more collectable fuelwood material.

In practice, with the lax supervision and collusion of subordinates with the petty contractors in some places, many useful trees were felled and removed in the name of useless growth. As was customary in the department, many allegation petitions flew to the higher ups from many divisions in the State pointing to the flawed reforestation policy and a Committee was set up under a Conservator of Forests to look into the effectiveness of this method of reforestation in the late part of 1985.

I could vividly recollect that a look at certain slopes along the Manapparai-Dindigul highway and along Thuraiyur- Perambalur highway gave an impression that a forest barber was at work to give a close shave to the hill slope of its vegetation. On many an occasions, it turned out to be an eyesore for the people of the area and the public passing along such forested slopes. Further, artificial regeneration with nursery grown seedlings relied primarily on quick growing species of Acacias and Albizzias and similar other species. However successful the artificial regeneration techniques and the protection and care to the plantations are, it might take atleast 20-30 years for the forest slope to regain its old appearance, I used to wonder. Therefore, I felt that the system followed was found to be not conducive for the upgradation of vegetation as originally contemplated.

While there was minimal plantation target for Tiruchi territorial division, there was a Crash Plantation Division operating from Tiruchi that was given a massive target of reforestation of old fuel coupes. I insisted that I would particularly inspect individual plantation sites proposed by Crash division before giving a seal of approval for the site so that only highly degraded old fuel coupes with light growth are taken up for artificial regeneration.

Forest Resurgence

After detailed evaluation of the system by a team of senior Forest Officers headed by Conservator of Forests Thiru.B. Arul Prakasam and having recognized the futility of the above regeneration method in achieving a reasonable success of restocking the area with the desirable growth, Thiru. S. John Joseph, the then Chief Conservator of Forests issued a set of instructions to put an end to the practice of clearfelling and regeneration and prescribed only planting of useful species in gaps without resorting to any vegetation clearance for the purpose of planting vide PCCF's Circular No.44/1988 dated 26.11.1988. As District Forest Officer of Vellore Division, I remember this raised a lot of debate in the corridors of forest headquarters with many officers questioning the wisdom of gap planting and associated difficulties in checking the proper execution of the works and the survival and growth of planted seedlings.

Overall, our perspective regarding the reforestation of degraded forests witnessed a major shift post this time. What followed in our subsequent massive afforestation programmes such as Tamil Nadu Afforestation Project Phase I reinforced this changed outlook. Thus, the 1980's and 1990's witnessed a dramatic shift in the policy and approach of the Tamil Nadu Forest Department to the natural forests, which were till then looked upon as an inexhaustible resource waiting to provide an uninterrupted supply of fire wood and other forest products. This quantum change in approach put a halt to one of the pernicious practices of clear felling the natural forests, thus arresting the trend of forest degradation and setting the tone for conservation oriented forestry. Today, much of these old fuel-felling areas have staged a comeback through coppice growth from the rootstock and recovery of species – thanks to the protection efforts of the Department - and gradual re-clothing the eroded hill ranges.

- to be continued

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“எனது பயணமும் காடுகள் தந்த கதைகளும்”

டாக்டர் இரா ஆனந்தகுமார், இஆப.,
ஊரக வளர்ச்சி மற்றும் ஊராட்சி ஆணையர் (பயிற்சி)
பனகல் கட்டிடம், சைதாப்பேட்டை, சென்னை - 15

பலவற்றில் ஒன்று

இன்றைக்கு பேரன்பிற்கும் பெருமதிப்பிற்கும் உரிய ஓய்வுபெற்ற IFS அதிகாரி திரு. பிரபாகரன் சார் ஒரு வாட்ஸ் அப் செய்தி அனுப்பியிருந்தார். “நமது வனம்” என்று வெளிவரும் காலாண்டு வலை பத்திரிக்கை. அதில் நீங்கள் கட்டுரைகள் எழுதலாமே என்று கேட்டிருந்தார். இப்பொழுது 'மினி ஸ்டோரி' குறுங்கதைகள் எழுதி எழுதி அதுவே பழகிப்போனதால் அவருடைய வேண்டுகோளுக்கும் நம்முடைய புத்தகத்திற்கும் பாலம் அமைத்தோம்.

நமது வனம் என்பதை ஆங்கிலத்தில் அவர் அனுப்பிய போது நமது வானம் என்றுதான் படித்தேன். பிறகு இரண்டும் ஒன்றுதான் என்று தோன்றுகிறது. “விருதுநகரில் 'கண்ணாடி மாளிகை' எஸ்டேட் பக்கம் டிரெக்கிங் போய் வாருங்கள் உங்களை மறக்கடிக்கும் அழகு” என்று பிரபா சார் சொல்லியிருந்தார். சாஸ்தா கோவில் வனத்துறை வாட்ச் டவரில் ஐந்து நாட்கள்.. (இடைவெளி விட்டு) தங்கி இருந்தேன் என்பதை இந்தக் கதை படிக்கும் பொழுதுதான் அவர் தெரிந்துகொள்வார்.

மசினகுடி, நீலகிரி காடுகளுக்குள் வனத்துறை ச஼ாரியில் பெரிய பூனையாம் புலியைப் பார்த்த பரவசத்தை துணை இயக்குநர் அருண்குமார் அவர்களின் உதவியால் அடைந்ததை நமது வனத்தின் வழியே பரப்பி மகிழ்கிறேன். அடிப்படையில் ஒரு கால்நடை மருத்துவர் என்பதால் திருச்சி அருகே யானைகள் சரணாலயம் சென்று வந்த அனுபவத்தைப் புத்தகமாக்கியது இங்கே சொல்லத் தகுந்த பல செய்திகளில் ஒன்று.

சென்னை
02.02.2025

சான்றிதழுக்குச் சாட்சி சொல்பவர்

'நமது வனம்' இதழுக்காக சென்ற 'மினி ஸ்டோரியில்' ஆரம்பித்து பொதுவான வாசகருக்காக (வழக்கம் போல முதல் வாசகர் இதை எழுதுபவர் தான்) ஒரு ஐந்து கதைகள் எழுதலாம் என்று இரண்டாவதில் பேனா இயங்கிக் கொண்டு இருக்கிறது. 'வைரல் ஆன சமையல்' என்று NCBH வெளியிட்ட ஒரு புத்தகத்தில் ஜெயந்தி, கோமதி உள்ளிட்ட யானைகளோடும் பாகன்களோடும், சதீஷ் என்கிற ஃபாரஸ்டர் மற்றும் அங்கு பணிபுரிந்து பிறகு வேறு துறைக்கு மாறுதலாகி (தேர்வை எழுதி) சென்ற நண்பர் சுதீஷ் உட்பட பலரைப் பற்றியும் பல பக்கங்கள் எழுதியிருந்தேன்.

ஜெயந்தி யானையின் காதுக்குப் பின்புறம் கழுத்து மீது அமர்ந்து அவளோடு தனியாக நடைப்பயிற்சி சென்றது ஒரு வாழ்நாள் சந்தோஷ தருணம். அங்கு அப்பொழுது திருமதி. சுஜாதா என்ற IFS அதிகாரி இருந்தார்கள். அனுமதி கொடுத்திருந்தார்கள். வனத்துறை அலுவலர் மற்றும் யானை பாதுகாவலர்கள், காவடிகள் ஆகியோருடன் கைப்பந்தும் கிரிக்கெட்டும் ஆடியதும் அதனோடு சேர்த்தி.

நமது வனங்களின் மீதிருக்கும் ஆர்வத்தைப் பேரார்வமாக மாற்றியதில் இப்போது மசினகுடியில் பணிபுரியும் நண்பர் அருண்குமார் அவர்களின் பங்கு அளப்பரியது. பறவைகளின் ஓசைகள் எப்படி மாறுபடும் என்பதை எழுப்பிக் காட்டியது அவரது குரல்வளை. அவர் அடித்த 'விசிலுக்கு' தன் இனம் தான், என்று நீலகிரி விஸ்ட்லிங் த்ரஷ் (Nilgiri Whistling Thrush) சான்றிதழ் அளித்து பதில் விசில் அடித்ததற்கு நான்தான் சாட்சி.. நமது வனத்தைத் தவிர.

சென்னை
02.02.2025

பேனா செய்த புண்ணியந்தான்

நமது வனத்தில் எழுதுங்கள் என்று பிரபா சார் சொன்னதும் அதில் இருந்த ஆங்கில கட்டுரைகளைக் கண்டு கொஞ்சம் மிரண்டு போய்.. “சார் டெக்னிக்கலாக ஸ்டாண்டர்டு மெய்ன்டெய்ன் பண்ண முயற்சி செய்கிறேன்!” என்றேன். அவர் பார்த்த பிறகு..” விளையாடாதீர்கள் சும்மா எழுதுங்கள்” என்று பதில் அனுப்பியதோடு மட்டும் அன்றி முதல் கதையைப் படித்துவிட்டு.. உடனே ஃபோனில் அழைத்துப் பாராட்டினார். அதுவே மீதமிருக்கின்ற கதைகளைக் கொட்ட கதவு திறந்தது.

“அழகாக ஆரம்பிக்கலாங்களா?” என்பது NCBH வெளியிட்ட மற்றொரு புத்தகம். அதில் நீலகிரி காடுகளை அது தந்த பாடங்களை பக்கம் பக்கமாகப் படம்பிடித்துக் காட்டியிருப்பேன்.

தான் காடுகளுக்குள் மிக அர்ப்பணிப்பு உணர்வோடு வேலை செய்வதால் மரங்கள் தழைத்து வளரும். அப்படி வளர வளர மழை உயரும். அந்த மழை பொழிந்தால் தண்ணீர் கிடைக்கும், அந்த தண்ணீரை என் ஊருக்கு அனுப்பி வைக்கிறேன். என் குடும்பம் இங்கே இல்லை. அடிக்கடி காடுகளுக்குள் நாள், பகல், இரவு கணக்கில்லாமல் சுற்றி அலைகிறேன் அதனால் அவங்க ஊரிலேயே இருக்காங்க. அப்பப்போ போய் பார்ப்பேன் என்று சொன்ன டாக்டர் இராஜஷ் ஊட்டியில் வனத்துறையில் பணி புரிகிறார். அவரைப் பற்றி எழுதுவதால் என் பேனா புண்ணியம் செய்துகொள்கிறது.

சென்னை
02.02.2025

உடனே பயணிக்கும் வனங்கள்

நயாகரா.. போய்விட்டு பேருந்தில் நியூயார்க் நோக்கிப் பயணித்துக் கொண்டிருந்தேன். பகலில் நிறம் மாறிக் கொண்டிருந்த காடுகளைப் பார்க்க முடிந்தது. இலைகள் ஆரஞ்சு, சிவப்பு, மஞ்சள் என்று பல வண்ணங்களில்

கவிதைகள் எழுதிக்கொண்டிருந்தன. உலகில் அதிகளவு நன்னீர்ப் பரப்பை தன்னகத்தே கொண்டுள்ள நிலப்பரப்பு. புரட்சிக் கவிஞர் பாரதிதாசன் “மானுட சமுத்திரம் நானென்று கூவு” என்றார் “காற்றுக்கென்ன வேலி வனத்துக்கென்ன வரம்பு” என்று பாட்டுப் பாடத் தோன்றியது.

இரவில் பேருந்து நகர்ந்த போது கூட இருட்டிற்குப் பின்னால் நின்ற மரங்களிடம் ஊடுருவிப் பார்த்து.. உங்களை நேசிக்கிறேன் என்று சொல்லி பகலில் அவை தந்த ஆக்ஸிஜனை நுரையீரல் வழிய வழிய நிரப்பிக் கொண்டு வந்தேனே! அது இன்னும் என் உடலில் எங்கேயோ உள்ள ஒரு செல்லில் சுவாசித்ததால் வசித்துக் கொண்டிருக்கலாம். பணி எங்கெங்கெல்லாம் அழைத்துச் சென்றதோ? அங்கெங்கல்லாம் வனம் என்னை வழிமாற்றிப் பின் தொடர்ந்து வந்தது.

ஜெர்மனியின் ஹேம்பர்க் நகரத்திற்கு ஒரு கருத்தரங்கிற்காகக் சென்றபோது அடிக்கடி கேக்கில் பார்க்கும் 'Black Forest' ஐ நேரில் சந்தித்த ஐந்து டிகிரி காலைப் பொழுதுகளை நமது வனத்தின் பக்கங்களில் கொஞ்சம் குளிராற கொண்டுவிடுகிறேன்.

சென்னை
02.02.2025

சாய வனம்

நமது வனத்தில் எழுதுவதற்கு பஞ்சாபின் ஹோசியார்பூர் காடுகளும், மத்தியப் பிரதேசத்தின் 'பாலகாட்' காடுகளும் கன்னியாகுமரியின் கோதையாறு காடுகளும் என்னை விட்டுவிடாதே என்று பேனாவைப் பிடித்து இழுத்தன. 'மோக்லி' என்கிற கதாபாத்திரம் சுற்றிவந்த நர்மதா நதிக்குப் பக்கத்திலிருக்கும் 'பேஞ்ச்' தேசியப் பூங்கா காடுகள் வழியாகப் பயணித்து ஒரு மாதம் வெய்ன் கங்கா நதிக்கரையில் தங்கியிருந்த அனுபவமே அலாதியானது.

அங்கே நிலக்கரிச் சுரங்க விடுதியில் நவீன வசதிகளை வேண்டாம் என்று சொல்லிவிட்டு யூகலிப்டஸ் மரங்களும் பவளமல்லிகளும் மணக்கும் வனத்துறை விருந்தினர் மாளிகையில் தங்கிக்கொண்டு அங்கு விளையாடிக்கொண்டிருந்த 'ரேஞ்சர்ஸ் காலேஜ்' பயிற்சி மாணவர்களோடு கைப்பந்து விளையாடிக் களித்த சம்பவம் நமது வனத்தைப் படிக்கின்ற ரேஞ்சர்களின் ரேஞ்சுக்கு சரியாக வரும் என்று நினைக்கிறேன்.

அங்கே கம்பெனி கொடுத்த திரு. கௌரவ் ஜெய்ன் IFS அப்போது பயிற்சியில் இருந்தார் இப்போதும் எங்கோ வனத்துள் இருப்பார் எப்போதும் என் மனத்துள் குறிப்பாக வயிற்றுள் இருப்பார் ஏனென்றால் அவரைப் பார்த்துதான் இரவு உணவை நிறுத்திவிட்டு இருவேளை உணவு முறைக்கு மாறியது. நமது வனம் இப்படி நமது மனம் நிறைந்திருக்கிறது.

சென்னை
02.02.2025

நமது வனம்

“அந்தக் காலத்திலே நான் நாட்டியம் பார்த்திருக்கேன்.. ”பிரபா சார் ஆரம்பித்தார். எனக்கு லலிதா, பத்மினி, வைஜெயந்தி மாலா, பாலி என்று கருப்பு வெள்ளை நாட்டியப் பேரொளிகள் மனதில் மின்னத் தொடங்கினார்கள். அவர் தொடர்ந்தார். கால் பாதங்களில் சாயம் பூசிக்கொண்டு நடனமாடத் தொடங்குவார்கள். நடனம் பார்த்தால் அவ்வளவு ஜோராக இருக்கும். வளைந்து நெளிந்து கைகளில் அபிநயம், முத்திரைகள் வைத்து.. கண்களால் நம்மைப் பாடாய்ப்படுத்தி.. ம்.. அப்புறம்.. என்று சுவாரஸ்யமாக அவர் நான்கு வரிகளில் ஆங்கிலத்தில் எழுதி அனுப்பியிருந்த வாட்ஸ் ஏப் மெஸேஜுக்குள் ஏகப்பட்ட சீன்களை நுழைத்துப் படித்துக் கொண்டு இருந்தேன்.

வனங்களைக் குறித்த கட்டுரையை ஏன் முழுநீள கட்டுரையாகவே எழுதக் கூடாது என்று துளி நிலா கேட்க.. உங்கள் ஒளித்துகளின் வன வாணி என்று தனி தொடர் போடுங்களேன் என்று டாக்டர் நுண்மதி சொல்ல கடந்த ஐந்து கதைகள் வெய்ன் கங்கா நதிப் பரப்பை நீந்திக் கடந்த சந்தோஷத்திற்கு இணையான சந்தோஷம் தந்தன.

'நமது வனம்' புத்தகத்தில் இந்தக் கதைகள் வரும் என்பதே மகிழ்வு. கட்டுரை எழுத வேண்டும் என்றபோது மலைப்பாய் இருந்தது கதைகள் என்றவுடன் மழையாய் பொழுகிறது அதனால் போத்திப் படுத்தாலும் படுத்துப் போர்த்தினாலும் ஒன்றே என்றேன் துளி நிலாவிடம். பிரபா சார் தொடர்ந்திருந்தார். “நாட்டியம் முடியும் பொழுது அவர்கள் கால் சாயம் கொண்ட ஒரு அழகான ஓவியத்தை வரைந்து விட்டுச் செல்வார்கள். அவ்வளவு நேரமும் வரையவும் செய்திருப்பார்கள். அதுபோல உங்கள் கதைகளும் இனிமை. படித்து முடிந்ததும் உள்ளே படம் நிற்கிறது.

சென்னை
29.03.2025

சுவாசிக்கும் வேர்கள்

பிச்சாவரம் சதுப்பு நிலக்காடுகளை எவ்வளவோ நாட்களாக பார்க்க வேண்டும் என்று இருந்தேன். நேற்றுத்தான் முடிந்தது. “தில்லை விடங்கன்” என் சொந்த ஊர் என்றார் அருள். ஒவ்வொரு மரமும் எப்படி சுவாசிக்கிறது... உப்புத் தண்ணீரை எப்படி சமாளிக்கிறது என்று தெளிவாக விளக்கினார். ரைஸோஃபோரோ என்கிற மரங்கள் பிச்சாவரம் காடு தொடங்கும் இடத்தில் இருக்கின்றன. அவற்றின் விதைகள் விவிபேரஸ் என்றார். காயில் உள்ள விதைகளிலேயே வேர் முளைத்துத்தான் விழுகிறது. பிச்சாவர நீர் அளவு இரண்டு மூன்று அடிகள் தான் இருக்கிறது. அறிவுமதி ஐயா.. சென்னை போகும் வழியில் ஃபோன் செய்து 'களி நண்டு அங்கே கிடைக்கும்”

என்றார். பையிடு கிங்பிஷர் என்ற மீன்கொத்தி கருப்பு வெள்ளை புள்ளி புள்ளியாக இருந்தது. ஹெலிகாப்டர் போல எய்ம் எடுத்து ஒரே இடத்தில் பறந்து எங்களுக்கு ஃபிரி ஷோ கொடுத்தது. அவிசீனியா என்கின்ற மரவகைகள் கீழிருந்து மேல் நோக்கி வளரும் சுவாச வேர்கள் வைத்திருந்தன. எங்கேயோ இருந்து வந்த மணி என்னோடு உருண்டு பிடித்து விளையாடினான். கடற்கரையில். அவன் ஒரு ஆறுமாத நாய்க்குட்டி. தில்லை மரம் என்கிற மரத்தைப்பற்றி தெரிந்து கொண்டேன். இங்கே விஷ பாம்புகள் கிடையாதாம் சில நாட்களாக உலகம் சொர்க்கமாகிவிட்டது. அவ்ளோதான்.

சென்னை
29.03.2025

கட்டுரை ஆசிரியர் டாக்டர் R. ஆனந்த குமார், இஆப, அவர்கள் (மஞ்சள் சட்டை அணிந்தவர்) தனது குழுவினருடன் பிச்சாவரம் காடுகளை படகில் சுற்றிவந்த புகைப்படம்

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VALUE OF BIODIVERSITY: THE BIOMIMICRY APPROACH.

Dr. S. Paulraj, IFS (R)

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Presently, as the technological advancement is fast growing on one side, problems are also growing on the other side equally. At one point of time, the problems due to development might make the further development to stall or to slow down. Thus, there is always a limitation for any development but, the needs are ever growing. In other words, there is no sustainability in our development. Who is the expert to devise sustainability? This is the right time to know how in nature the sustainability works.

The whole evolution of life system is based on sustainability. This has been evolved over millions of years by the Nature and stabilised. Nature survives with its diversified living and non-living things and maintains its sustainability. This sustainability is effectively maintained till the origin of the sixth sensed animal, the human beings! The nature's sustainability is threatened by unchecked development, most of which are against Nature's principle. Any action against nature will not last long. At one point of time, man has to regret for his problematic actions and to ask solutions for the problems from nature as it has got solution for all problems. This is what we call Biomimicry.

Biomimicry

Biomimicry is the practice of learning from, and then emulating nature's genius to solve human problems and create a more sustainable solution. In other words, it is a new way of viewing and valuing Biodiversity (Dop, L, 2010).

The value of biomimicry in solving problems is based on the strength of the biodiversity. More the biodiversity, more are the solutions. Biomimicry can be applied to any field of Science, Arts, Commerce, Management, Engineering, Medical etc., and it is more of an interdisciplinary subject. The application of biomimicry is not limited to higher plants and animals. In fact, one could get more biomimicry ideas from the life of many lower plants and animals such as Bacteria, fungi, ants etc. Thus, the importance of biodiversity is equally applicable for lower organisms.

During the recent years, the values of biomimicry have been highlighted by evolving more valuable, simple and sustainable solutions for various problems which are otherwise complicated or cumbersome. However, in India this subject is still in infant stage. This is evidenced by the fact that most of the biomimicry applications are discovered by experts from outside India. It is high time for the Indian scientists to take up research projects aiming for finding out novel application of biomimicry principles to solve various problems and issues faced by us in different fields.

Areas for Biomimicry approach:

Medicines / health and technology are the potential and more important areas for applying biomimicry principles for the welfare or benefits of Human beings.

Where to seek potential biomimicry principles which are more important and relevant to human beings? As already indicated, more biomimicry principles could be seen where, diversity is higher. Among the living things, microbes have the highest diversity *about one trillion species, next comes the plants and then the animals*. Among animals, insects have the very rich biodiversity.

Origin and evolution of Biodiversity

Although the word biodiversity is being talked much since past 50 years, our forefathers were able to identify the biodiversity some 2500 years back in Sangam Tamil literature. (Fig. 1). They classified the life organisms according to their number of senses they possess, like life with single sense, life with two senses and so on, and placed mammals with five senses. It is a wonder that plants and lower animals with one or two senses were able to survive over millions of years. These species with less number senses have more adaptations compared to animals with higher number of senses. Thus, these lower animals have more survival strategies and thus they are able to tell valuable solutions for the survival of higher animals.

With these basic principles one can find many biomimicry applications from the lower plants and animals.

Bacterial Biodiversity

Bacteria, among the earliest forms of life on Earth, emerged around 3.5 billion years ago, evolving from a common ancestor of prokaryotic and eukaryotic cells, and their evolution has been shaped by environmental changes and interactions with other organisms. Their interactions with human beings were also evolved along with human evolution and thus they became a part of the human life and physiology. These interactions may be either beneficial or harmful. The beneficial interactions become the integral part of human or animal life while harmful interactions are incidental and may be eliminated by will. If we study deep into the beneficial interaction, many of them are might have evolved as per the

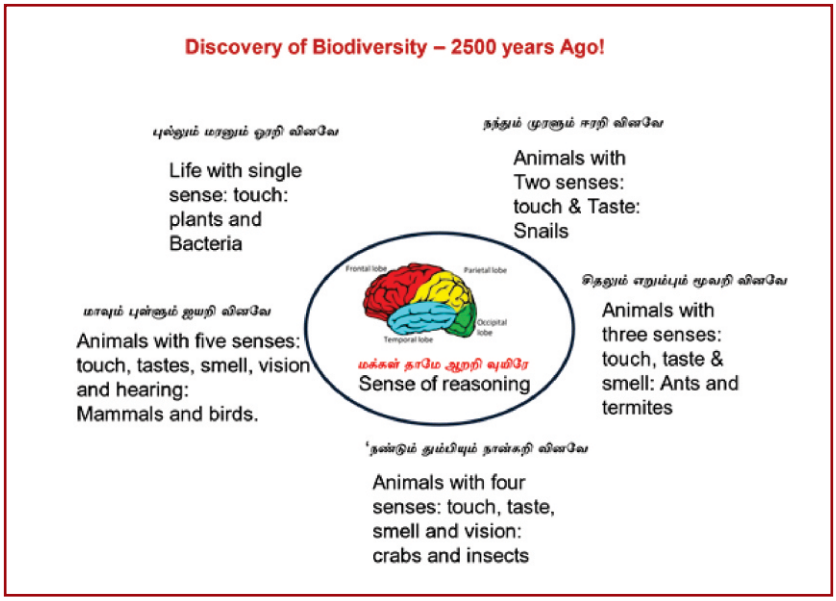
Discovery of Biodiversity – 2500 years Ago!
புல்லும் மரனும் ஓரறி வினவே
Life with single sense: touch: plants and Bacteria
நந்தும் முரனும் ஈரறி வினவே
Animals with Two senses: touch & Taste: Snails
மாவும் புள்ளும் ஐயறி வினவே
Animals with five senses: touch, tastes, smell, vision and hearing: Mammals and birds.
மக்கள் தாமே ஆறறி வுயிரே
Sense of reasoning
Frontal lobe
Parietal lobe
Occipital lobe
Temporal lobe
நிதலும் எறும்பும் மூவறி வினவே
Animals with three senses: touch, taste & smell: Ants and termites
நண்டும் தும்பியும் நான்கறி வினவே
Animals with four senses: touch, taste, smell and vision: crabs and insects

Fig. 1. The type of biodiversity as envisaged 2000 years ago.

Lamarckian theory of use and disuse. Accordingly, useful associations became the adaptive feature and thus became permanent.

We will see here some of the interesting associations of the Gut bacteria and how they are playing some important role in human physiology. As the large intestine acts as a transit storehouse of all undigested and unabsorbed food materials, some bacterial species occupied this non-competitive niche and started surviving here by making some symbiotic relationships. In due course such beneficial relationship became the essential conditions for a healthy lifestyle.

Broad group of Bacteria that are associated with daily life.

At the time of birth, there are no Bacteria in the guts of the new-borns. However, some bacteria occupy the guts of the baby through the mother source. Thus, a newborn baby may have about 100 species of bacteria to start with. These bacteria are encouraged to grow by the consuming some special diet present in mother's milk. Here comes the importance of mother milk. As the baby grows, many new species of bacteria are added due to diversified food. As the baby become adult, there are about 1000 species of bacteria found in the guts. It is not necessary that all these species are to be present at a time in any human body. It is said more the diversity of bacteria, more the health benefits. The total number of gut bacteria is almost equal to the total number of cells in human body!! Here are the major groups of bacteria that one should know their role in human health.

Firmicutes: Firmicutes bacteria, when present in high ratios compared to Bacteroidetes, are associated with obesity because they may be more efficient at extracting energy from fatty food, leading to increased calorie absorption and potentially contributing to weight gain. Recent prevalence of obesity is related to abundance of this group bacteria and poor representation of other useful bacteria.

Bacteroidetes – fiber eaters – produce gut wall saving chemical, Butyrate / anti-inflammatory

Akkermansia – live on gut wall mucous – protect gut wall from infection / anti-inflammatory. Grow well under starvation when other beneficial bacteria are less abundant!!

Lactobacillus and Bifidobacterium – fiber eating – got from mother – protect from other harmful bacteria

The more different types of food you eat, the more diverse your microbiome. Chemicals in the processed food reduce bacterial richness – leading to obesity and diabetes. Recent prevalence of obesity and diabetes is related to imbalance in bacterial diversity.

Value of Biodiversity: The Biomimicry approach:

The following are some areas from which biomimicry approach could be applied: Therapeutic approach, Engineering and Technology, Business management and Sociological approach.

Therapeutic approach: Unlike human beings, wild plants and animals save themselves from injury and diseases in their own ways. The plans have evolved to synthesis small molecule proteins called peptides / cyclotides. These small amino acid complex help to prevent pest attacks. Their mechanism of action in plant defense is applied to fight against some human diseases including cancer and many cancer drugs have been developed using these cyclotide molecular actions. There are immense scopes to use these molecules in the pharmaceutical industry as thousands of cyclotide molecules are available in diversified

plant species.

Among animals, their physiology and behaviors provide new ideas in finding out cause and treatments of our diseases. The behavior of infected ants seeking hydrogen peroxide from the food brought out the fact that this chemical is used as germicide and also capable of killing cancer cells. The importance of P53 protein (gene) in the defense against the cancer was found out from elephant body cells, the latter poses 20 pairs of these genes and there by prevent cancer attack more effectively (human cells has only one pair of P53 gene and more liable for cancer attack on mutation).

These are some of the examples to highlight the importance of biomimicry approach for our betterment of our health applied from diversified plants and animal.

Mechanical and technological values of Biomimicry: During recent years biomimicry is widely used in these fields. The design of the bullet train engine face is derived from the Kingfisher beak and head shape to reduce friction while moving very fast. Similarly, the presence of tubercle structure to facilitate easy locomotion in whales' flippers are applied in the windmill wings for easy rotation.

Business ideas: Outsourcing is one of the successful business ideas. This has been practiced effectively in the symbiotic relationships between Bull-horn Acacias and Ants. Similarly migratory birds teach us the effective way of team work model.

Sociology: Birds are the very successful group of animals in their evolution. Social life among them is one of the major factors for their success. It is surprising to know that more than 90% of the bird species are monomorphic (both male and female morphologically appear similar) and both male and female take part in the breeding behavior. This type of social behavior is one of the main reasons for their survival and Natural selection prefers no sex-biased social life in birds which resulted in a greater number of monomorphic pairs. Now we are trying to provide equal opportunity for male and female in order to have a very successful social life as preferred by Nature!

Thus, there are thousands of opportunities to learn from Nature for the better

Examples of Biomimicry:

The migratory birds while flying forms 'u' shape pattern to save energy which is mimicked by group flying of war jet planes. This also reveals about a successful 'Team work'

The presence of Tubercles on the flipper surface facilitates smoother movements of the flipper to move the huge body. This structure is mimicked while designing windmill wings to facilitate rotation even with slow wind movement.

The painted storks are monomorphic and both male and female involve in parental care without any sexual discriminations!

In the symbiotic association between Bull-horn acacia and ants, the acacia provide food and shelter to the ants while the ants protect the plants from the browsing animals in a cost-effective way.

Kanha Shanti Vanam: A Model for Afforestation, Water Restoration, and Conservation of Threatened Plants

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Kanha Shanti Vanam (KSV), located in Hyderabad, Telangana, stands as a pioneering ecological restoration initiative led by the Heartfulness Institute. Spanning 1,400 acres on the Deccan Plateau, KSV integrates afforestation, water conservation, and biodiversity preservation, transforming once-arid landscapes into a thriving green sanctuary.

Afforestation and Biodiversity Enhancement

KSV has successfully revitalized barren terrain by implementing large-scale afforestation programs focused on indigenous species. Through Corporate Social Responsibility (CSR)-driven initiatives and dedicated conservation efforts, over 186,000 trees have been planted, fostering a vibrant ecosystem. The resurgence of birds, butterflies, and mammals within the area reflects the remarkable impact of these afforestation projects.

Water Restoration and Conservation

Recognizing the critical need for water sustainability, KSV has developed seven rainwater harvesting ponds to replenish groundwater reserves and sustain local flora and fauna. Sustainable irrigation techniques and eco-sensitive landscaping further optimize water conservation, ensuring the resilience of the ecosystem.

Conservation of Threatened Plants

A key pillar of KSV's mission is the preservation of rare and endangered plant species. Notably, KSV is actively engaged in the conservation of the Palani Hill Rudraksha *(Elaeocarpus blascoi)*, one of the world's rarest trees. Advanced conservation techniques such as tissue culture propagation and habitat restoration are being employed to safeguard its survival for future generations.

By seamlessly blending ecological sustainability with spirituality, Kanha Shanti Vanam serves as a beacon of inspiration, motivating individuals and organizations alike to contribute to a greener, healthier planet.

Innovative Conservation at Kanha Shanti Vanam: Tree Translocation, Rainforests, and Native Forest Restoration

Under the visionary leadership of Rev. Daaji, Kanha Shanti Vanam has set a precedent in conservation through innovative techniques such as tree translocation. Spearheaded by

S. Saravanan, this project has successfully relocated fully grown Coconut trees, ensuring environmental balance while accommodating developmental needs.

Tree translocation

Additionally, Dr. V. Ramakantha has played a pivotal role in the creation of Biodiversity Park, a dedicated sanctuary for native plant species. Within this conservation initiative, rainforests are being meticulously developed using indigenous flora, providing crucial habitats for wildlife, regulating microclimates, and enriching biodiversity.

Through the restoration of degraded landscapes and the strategic reintroduction of native vegetation, KSV exemplifies a holistic approach to afforestation and conservation. By merging traditional wisdom with modern ecological practices, Kanha Shanti Vanam continues to set new benchmarks in environmental stewardship and sustainability.

Rainforest in Hyderabad 2014 and 2024

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TIRUNELVELI DIARY

K. Dhanapal, M.Sc.,
Formerly Deputy Conservator of Forests

Tirunelveli district is uniquely blessed with all five landscapes (Ainthinai) described in ancient Sangam literature: Kurinji (hills), Mullai (forests), Marutham (agriculture), Neithal (coastal), and Palai (arid). Flanked by the Western Ghats and the Bay of Bengal, this district boasts diverse ecosystems. Landmarks like the Nellaiappar Temple, Tirunelveli Halwa, Manimutharu Falls, Kudankulam Nuclear Power Plant, and Kalakad Mundanthurai Tiger Reserve (KMTR) define its cultural and natural richness. More recently, Tirunelveli has earned the distinction of being Tamil Nadu's "Green Energy Capital," generating over 25% of the state's wind energy.

Although I never served in Tirunelveli during my career, I have visited it numerous times. In recent years, my passion for birding has taken me to KMTR in the Western Ghats. Tirunelveli ranks third in Tamil Nadu for the number of bird species sighted, following Coimbatore and Kanyakumari. The Western Ghats host a range of endemic and migratory birds, while the plains are dotted with man-made lakes. Among them, the Koonthakulam Bird Sanctuary in Nanguneri Taluk is notable for being the largest breeding ground for resident birds in the state and forms part of the Central Asian Flyway.

I first visited Koonthakulam about ten years ago and remember vividly spotting the Yellow-wattled Lapwing and Indian Courser. In 2022, I also traveled to Upper Kodayar to catch a glimpse of the elusive Ashambu Laughingthrush, an endemic species. This year, I returned with four birding friends from Bangalore, planning our trip for February 28th to March 2nd.

Western Ghats in Tirunelveli

We arrived in Tirunelveli by train on the morning of February 28th and hired a car to drive to the Manjolai estate. Rain was forecast during our stay, and as we climbed the hills, mist and drizzle set in. By the time we reached Upper Kodayar around noon, thick clouds had darkened the sky.

While waiting for the rain to subside, we saw Square-tailed Bulbuls and Imperial Pigeons flying about. Post-lunch, we heard the distinctive call of the Scimitar Babbler, followed by the sound of our target bird—the Ashambu Laughingthrush. One friend captured a shot, confirming our sighting.

We spent the next fifteen minutes tracking the bird in silence until it perched visibly on a branch, allowing us to take several good photos. The Ashambu Laughingthrush is one of five endemic Laughingthrush species in the Western Ghats—the others being Nilgiri, Palani, Wayanad, and Banasura. Of these, the Banasura and Ashambu species are the hardest to spot due to the inaccessibility of their habitats.

Ashambu Laughingthrush
(Ashambu chilappan)

That evening, heavy rain confined us indoors. On March 1st, the rain persisted until the afternoon, prompting us to descend to the plains. Around Manimutharu Falls, a flash of color caught my eye. My friend shouted, "Black-capped Kingfisher!" I quickly unpacked my camera, only to find the lens fogged due to the temperature shift from Upper Kodayar. After several attempts and careful wiping, I managed a decent shot. Though I had previously seen this species in coastal mangroves, encountering it inland was a delightful surprise.

Birders keenly watching the movements of the bird.

Manimutharu waterfalls

Black-capped Kingfisher

We returned to Tirunelveli by 7 PM and planned a lake visit for the next morning despite a continued rain forecast. Having come all the way from Bangalore, we were determined not to let the weather hold us back.

Tirunelveli has numerous lakes ideal for birding. While Koonthakulam is the most popular, with 388 recorded species—nearly 70% of Tamil Nadu's bird diversity—we chose to explore a lesser-known site: Vijayanarayanam Lake, about 60 km from Tirunelveli and 7 km from Koonthakulam.

We departed at 6 AM under overcast skies and light drizzle. By 7 AM, we reached the lake, which was one-third full. We saw Painted Storks and Spoonbills preening lazily on one side. Our target was the Caspian Plover, a migratory bird from West and Central Asia that winters in parts of Africa and occasionally visits peninsular India.

As we scouted the dry grass on the lake's periphery, we spotted a Peregrine Falcon—the fastest bird in the world—resting on a stone. Although I've seen Peregrines before, I took the opportunity to get close for a few shots. Meanwhile, my friends continued their search for the Plover.

Peregrine Falcon

Eventually, I saw a lone Greater Flamingo feeding in the shallow waters. Just then, one of my friends called me over to where they had spotted the Caspian Plover. I rushed over and saw three Caspian Plovers mingling with a group of Little Ringed Plovers. We waited patiently, and to our delight, the birds gradually moved closer, allowing us to capture clear photos.

This marked the first time any of us had seen the Caspian Plover, making it a rewarding experience. Just as we began scanning for other species, heavy rain resumed, forcing us to retreat. We returned to our hotel for lunch and later boarded our train back to Bangalore, hearts full of pleasant memories.

Caspian Plovers

தொல்காப்பியத்தில் உயிரியல் பல்வகைமை

ச. சுடலை முத்து Bsc (Ag), M.A, LLB.
முன்னாள் மேலாளர், பாரத ஸ்டேட் வங்கி

தமிழ் மொழியின் பழமையான நூல் தொல்காப்பியம். ஆகும் .இது தமிழ் மொழியின் முதல் நூலாக திகழ்கிறது. இதன் காலம் கி.மு 2500 ஆண்டு என கணிக்கப்பட்டுள்ளது . இதன் ஆசிரியர் தொல்காப்பியர் இது மொழி நூலானாலும் இலக்கண நூலாகும் . ஆகவே தமிழ் செம்மொழியான விளங்குகிறது. இதன் அமைப்பைக் காணும்போது இது எழுத்ததிகாரம் சொல்லதிகாரம் பொருள் அதிகாரம் என்று மூன்று அதிகாரங்களைக் கொண்டது. ஒவ்வொரு அதிகாரமும் ஒன்பது இயல்களை உள்ளடக்கியது. மொத்தம் 1610 நூற்பாக்களைக் கொண்டது. மூன்றாவது அதிகாரமான பொருள் அதிகாரத்தின் கடைசி இயலான மரபியலில் உயிர்களின் பாகுபாடு தவிர விலங்கினத்தின் இளமைப் பெயர்கள் ஆண் பெண் பால் பெயர்கள் ஒவ்வொரு விலங்கிற்கும் கூறப்பட்டுள்ளது என்பது வியக்கத்தக்கது. உலக அளவில் பரிணாம விஞ்ஞானி சார்லஸ் டார்வின் (கி. பி-1809-1882) , உளவியலின் தந்தை என அறியப்படும் சிக்மன்ட் பிராய்ட்(, கி. பி -1856 -1939), இயற்கைவியல் விஞ்ஞானி சார்லஸ் லின்னேயஸ் (1707 -1778) இன்னும் பல விஞ்ஞானிகள் கண்டு பிடித்த ஆய்வுகளை 2500 ஆண்டுகளுக்கு முன்பே தொல்காப்பியம் கூறுகிறது என்பது தமிழ் மொழியின் தனிச்சிறப்பாகும். இனி நாம் உயிரினங்களை பாகுபாடுகளை தொல்காப்பியர் எவ்வாறு கையாண்டு உள்ளார் என்பதை விவரமாக காணலாம்.

உயிர்களின் பகுப்பு (அறிவின் அடிப்படையில்)

தத்துவஞானி ஓசோ சொல்லுகிறார் விழிப்புணர்வு மட்டும் தான் உனக்கு சொந்தம் வேறு எதுவும் இந்த உலகத்தில் உனக்கு சொந்தமில்லை. தொல்காப்பியரும் " உணர்தல் " தான் அறிவு என்கிறார். அறிவின் அடிப்படையில் உயிர்களை ஆறு வகையாக பிரித்துள்ளார்

1. ஓரறிவு உயிர்
2. ஈரறிவு உயிர்
3. மூவறிவு உயிர்
4. நாலறிவு உயிர்
5. ஐந்தறிவு உயிர்
6. ஆறறிவு உயிர்

நூற்பா

"ஒன்றறி வதுவே உற்றறி வதுவே
இரண்டறி வதுவே அதனோடு நாவே
மூன்றறி வதுவே அவற்றொடு மூக்கே
நான்கறி வதுவே அவற்றோடு கண்ணே
ஐந்தறிவு வதுவே அவற்றோடு செவியே
ஆறறிவு அதுவே அவற்றொடு மனனே
நேரின் உணர்ந்தோர் நெறிப்படுத்தினரே"

(பொருளதிகாரம் - மரபியல் : 27)

விளக்கம்

- ஓரறிவு உயிர் உடம்பால் உணர்வது
- ஈரறிவு உயிர் : உடம்பு + வாய்-
- மூவறிவு உயிர்: உடம்பு+வாய்+ மூக்கு
- நான்கறிவு உயிர்; உடம்பு + வாய்+ மூக்கு + கண்
- ஐந்தறிவு உயிர்; உடம்பு +வாய்+ மூக்கு+ கண் +செவி
- ஆறறிவு உயிர்; உடம்பு +வாய்+ மூக்கு +கண் செவி +பகுத்தறிவு

பண்புகள்

1. ஓரறிவு உயிர்

ஓரறிவு உயிர் என்பது உடம்பினால் வெப்பம் ,தட்பம் வன்மை ,மென்மை அறியும் உயிரினம் ஆகும் .

2.ஈரறிவு உயிர்

ஈரறிவுஉயிர் என்பது உடம்பினாலும் அறியும் அறிவோடு வாயினாலும் இனிப்பு புளிப்பு, துவர்ப்பு முதலி யனவற்றையும் அறியும் உயிரினம் ஆகும்

3.மூவறிவு உயிர்

மூவறிவு உயிர் என்பது உடம்பு, வாய் இவற்றோடு மூக்கினால் நறுமணம் துர்நாற்றம் இவற்றையும் அறியும் உயிரினம்.

4.நான்கறிவு உயிர்

நான்கறிவுயிர் என்பது உடம்பு, வாய் ,மூக்கு இவற்றோடு கண்ணால் வெண்மை ,கருமை, செம்மை ,பசுமை போன்ற வண்ண வேறுபாடுகளின் உணரும் உயிரினம் ஆகும்.

5. ஐந்தறிவு உயிர்

ஐந்தறிவு உயிர் என்பது உடல் ,வாய், மூக்கு, கண் இவற்றோடு செவிப்புணலால் ஓசை வேறுபாட்டையும் அறியும் உயிரினம் ஆகும்.

6. ஆறறிவு உயிர்

மனத்தினால் அறியும் ஆறறிவு என்பது மேலே கூறிய ஐந்து அறிவுடன் ஐந்து அறிவுடன் இது செய்யின் இது விளையும் என்ற அனுபவம் போன்ற அறியும் உயிரினம் ஆகும்

இவ்வாறு உலகில் உயிர்கள் யாவும் ஆறு வகையாகப் பகுப்பட்டன இனி இவை ஒவ்வொன்றையும் தனித்தனியாக காணலாம்

நூற்பாவும் மேற்கோளும்

1.ஓரறிவு உயிர்கள்

" புல்லும் மரனும் ஓரறிவினவே
பிறவும் உளவே அக்கிளைப் பிறப்பே"
(தொல் -பொருதிகாரம்- மரபியல் 28)

புல் மரம் முதலியன ஓரளவு உயிர்களாம், "பிறவும் உள" என்று தொல்காப்பியர் கூறியதால் நீர்த்தாவரங்களும் உள என எடுத்துக் கொள்ளலாம்.
எடுத்துக்காட்டு : 1)தாமரை 2) ஆம்பல்,

2.ஈரறிவு உயிர்கள்

" நந்தும் முரளும் ஈரறிவு உணவே
பிறவும் உளவே அக்கிளைப் பிறப்பே "
(தொல்- பொருளியல்- மரபியல் -29)

எடுத்துக்காட்டு: நத்தை ,சங்கு போன்றவை.

3.மூவறிவு உயிர்கள்

"சிதலும் எழும்பும் மூவறிவினவே
பிறவும் உளவே அக்கிளைப் பிறப்பே"
(பொருளதிகாரம்- மரபியல்:-30)

எடுத்துக்காட்டு . 1.கரையான் 2 எறும்பு போன்றவை

4. நாலறிவு உயிர்கள்

"நண்டுந் தும்பியும் நான்கறி வினவே
பிறவும் உளவே அக்கிளைப் பிறப்பே"
(பொருளதிகாரம்-மரபியல்-31)

எடுத்துக்காட்டு 1.நண்டு 2),தும்பி போன்றவை

5. ஐந்தறிவு உயிர்கள்

"மாவும் மக்களும் ஐயறிவினவே
பிறவும் உளவே அக்கிளைப்பிறப்பே"
தொல்- பொருளதிகாரம்-மரபியல் 32)

எடுத்துக்காட்டு ; நான்கு கால்களை உடைய விலங்குகளும் மற்றும் ,பறவைகளும்

6. ஆறறிவு உயிர்கள்

"மக்கள் தாமே ஆறறிவுயிரே
பிறவும் உளவே அக்கிளை பிறப்பே"
(தொல்- பொருளதிகாரம்-மரபியல் -33)

மனிதன் மேற்கூறிய ஐந்து அறிவு உடையவற்றோடு மனம் என்னும் ஆறாவது உடையவர்கள் . பகுத்தறியும் பண்பு கொண்டவன் .

விதிவிலக்கு

"ஓர் சார் விலங்கும் உளபென மொழி"
(தொல் - பொருளதிகாரம்-மரபியல் 34)

கிளி, குரங்கு, யானை முதலியனவும் ஆறாவது அறிவை பெற்றவை என்று கூறுகிறார் தொல்காப்பியர்.

பதினேழு பதினெட்டாம் நூற்றாண்டுகளில் விஞ்ஞானிகளும் தத்துவ மேதைகளும் கண்டறிந்த ஆய்வுகளை இரண்டாயிரம் ஆண்டுகளுக்கு முன்பே தொல்காப்பியர் கூறியிருப்பது அவருடைய நுண்ணறிவு வியத்தற்குரியது.

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NATURE'S DARKSIDE

THE REALITY OF INFANT KILLING IN BIG CATS - Part 2

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…..Continued from the previous issue

DECODING THE BEHAVIOURS OF INFANTICIDE IN HYENAS

Hyena females kill cubs by crushing their skulls- the same way that adult hyenas kill small prey. Photo courtesy: Kate Yoshida

Spotted hyenas *(Crocuta crocuta)*, highly social animals living in groups of the Masai Mara National Reserve and Amboseli National Park in Kenya, show a fascinating example of infanticide. These animals live in complex social groups where females dominate. Over the past 30 years, extensive research on these hyena populations has provided valuable insights into why and how infanticide occurs within their groups.

Unlike many animals where males kill cubs to increase their own chances of reproducing, female spotted hyenas are the main culprits of infanticide. This behaviour occurs within dens where multiple mothers raise their young together. These acts of infanticide are not random but appear to be related to the social hierarchy and competition among the females within the group.

Research shows that infanticide is a significant cause of death for young spotted hyenas. Interestingly, both male and female cubs are equally likely to be killed. However, it's the adult females, usually those with higher social status, who are responsible for these killings. Sometimes, they even get help from their relatives.

Experts believe that this behaviour is a way for dominant females to gain an advantage. By killing the cubs of lower-ranking females, they reduce competition for resources like food and water, improving the chances of their own cubs surviving. This highlights the complex social dynamics within hyena groups and shows that infanticide is a deliberate strategy rather than just random aggression.

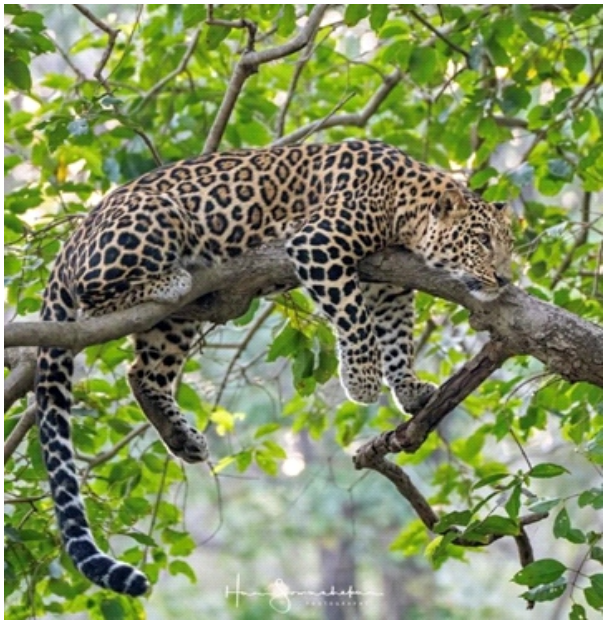
The behaviour of female hyenas demonstrates the complexity of infanticide in the animal kingdom. While males are often seen as the main culprits, females play a crucial role in some species. This behaviour, driven by competition for social dominance, emphasizes the importance of considering various factors and contexts when studying infanticide in animals.

THE DYNAMICS OF LEOPARD INFANTICIDE

Infanticide, the killing of young by adults, is common in social mammals, significantly

impacting their populations. However, its role in solitary animals like the leopard remains unclear, especially its evolutionary purpose. This study provides evidence of infanticide in African leopards *(Panthera pardus)*, and explores its potential causes.

As per finding of the researchers Gay A. Balme and Luke T.B. Hunter that infanticide is frequent in male leopards, contributing to a substantial portion of juvenile deaths. Males were observed feeding on the remains of cubs with the distressed mother in attendance on two occasions they recorded, carcasses of cubs were found with wounds in some other occasions. Males unrelated to the victims were the primary perpetrators. These results suggest that infanticide in leopards primarily serves as an adaptive strategy for males to enhance their reproductive success.



Leopard is indulging in his favourite pastime, lounging on a tree in the early morning in Rajaji National Park, Uttarakhand
(Photo by Hari Somashekar)

Female infanticide poses a more complex challenge, more violent and tragic. In contrast to males, female leopards rarely receive immediate advantages from the act of killing the young of others. Consequently, researchers speculate that female leopards might commit infanticide to enhance their opportunities for acquiring food or other resources such as breeding areas or future territories for their own young.

Female leopards have evolved various strategies to protect their cubs from infanticide; further supporting the idea that male-driven sexual selection plays a significant role. This study shows that infanticide significantly influences how leopards live and interact within their environment. Therefore, when managing leopard populations, especially during interventions that increase adult male turnover, it's crucial to consider the impact of infanticide on their population dynamics.

ANALYSING CHEETAH INFANTICIDE

The cheetah *(Acinonyx jubatus)*, renowned for its exceptional speed and agility, stands as a testament to evolutionary marvels. These captivating creatures, primarily inhabiting Africa and a small region in central Iran, fascinate wildlife enthusiasts and researchers alike.

Their streamlined bodies, long legs, and flexible tails enable them to reach astonishing speeds of up to 128 km/h, making them the fastest land animals.

The cheetah is built for speed. It has long, thin legs, a flattened rib-cage and small head that provides the least resistance when it cuts through air. Photo courtesy; Berry/Shutterstock

Cheetahs, which are medium-sized carnivores, coexist with larger carnivores like lions and spotted hyenas. Larger carnivores keep cheetahs under control, which is why they are called "mesopredators". The actions of these large carnivores can include both attacking cheetah cubs and stealing prey in a way called kleptoparasitism. Unlike the leopard, cheetahs lack the strength to haul their kills up trees to stay safe from scavengers, and they cannot physically defend themselves against a lion. Hunting is usually done by them when larger predators are absent or less active, and even during the day.

The researchers established that the tactics cheetahs use depend on which type of threat they face from large carnivores. The primary threat to male cheetahs and single females without cubs is having their kill stolen. They therefore spend little time watching out for attacks, and instead eat their prey as quickly as possible before it can be snatched away from them.

Mothers with cubs must first ensure the safety of their offspring and that they get enough to eat. Cubs can eat quite slowly because of the size of the cubs' mouths and their tendency to take regular breaks to rest or play.

While cheetahs are often easily spotted, infanticide, the killing of young by adults, has never been documented in this species. However, a potential case was observed in the Masai Mara, Kenya, where a male attempted to separate a cub from its mother, possibly to mate with her. Unlike some other carnivores, male cheetahs, regardless of whether they sired the cubs, do not exhibit increased aggression towards them.

The migratory nature of female cheetahs in the Serengeti, a protected area in Tanzania, may explain the absence of infanticide. Since females don't establish permanent territories, males would likely gain little advantage by killing unrelated cubs.

UNDERSTANDING JAGUAR INFANTICIDE

Traditionally, the jaguar *(Panthera onca)*, the apex predator of the Americas, was believed to be a solitary species, much like our tigers. However, recent research challenges this long-held view. Video and photographic evidence now demonstrates that male jaguars can form social groups, a behaviour previously observed in lions and cheetahs.

While human activities pose a significant threat to jaguar survival, the specific causes of mortality in the wild are not fully understood. Although cannibalism and infanticide have been documented, these instances are rare. Notably, two suspected cases of infanticide were observed in jaguar cubs, further emphasizing the social complexities of

this supposedly solitary species. These findings are significant, particularly considering the jaguar's wide-ranging distribution.

Infanticide spoils. Jaguar male carrying the remains of a cub jaguar he killed and devoured.

Jaguars exhibit specialized hunting techniques, often delivering a single, lethal bite to the skull of their prey. The presence of abundant domestic livestock attracts jaguars, leading to increased conflict with humans and a heightened risk of infanticide.

When mother jaguars are feeding their cubs at a kill, they may be vulnerable to attacks from other adult jaguars, especially when the cubs are young (≤5 months old). The danger of infanticide rising can heighten tensions between jaguars and cattle ranchers, putting both cubs and adult jaguars at risk.

Case studies show that young cubs may consume cattle as they transition to a solid food diet. This behaviour, while natural, can increase the risk of infanticide in areas with high jaguar densities, where encounters with other adult jaguars are more common.

CONCLUSION

In essence, safeguarding the diverse life on Earth – our planet's animals and plants – is absolutely vital. This biodiversity is the cornerstone of a healthy ecosystem and a prosperous future for humanity. To achieve this, we must adopt sustainable practices. This includes establishing protected areas where human activities are limited, preventing the construction of new settlements in ecologically sensitive areas like hill stations, and minimizing the environmental impact of development projects like power plants, railways, and roads. Furthermore, we must actively restore areas damaged by mining. Ultimately, we all bear the responsibility of acting as responsible stewards of our environment. As foresters, we have a unique role to play in ensuring that these natural treasures continue to flourish and inspire generations to come.

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FROM THE FOREST ARCHIVES

Mr. V. Ganesan, IFS (R)
Formerly Additional Principal Chief Conservator of Forests, Tamilnadu

Ref No, 4102/53-B1
Confidential Circular

O/o the Chief Conservator of Forests, Madras
Dated: 23.02.1953

Sri V.V. Subramanian, I.C.S.,
Chief Conservator of Forests.

I wish to focus the attention of all the officers on the serious condition of our forests today. On account of the increase in population and the excessive felling of trees, licit or illicit without corresponding replacement, our forest resources have steadily dwindled in the past 30 years. We have been taking out of the forests every year, much more than what has been put in either by Nature or by Man. This process can not go on endlessly. There must come a time when forests will completely disappear and the Department itself will have to be wound up. We have now come uncomfortably near this prospect. Nobody is to blame for this state of affairs. It is all due to our bad luck to a number of adverse factors-increase of population, lack of a sense of civic responsibility, the War and so on. Whatever may be the causes, the indisputable results are there.

2. Forests are to the nation something more than a garden is to a house. Not merely do they form an ornament or a pleasure resort; but they also produce revenue and supply essential raw material for industry and civilized life -teak, rosewood, sal, red sanders (soon to become extinct), bamboo, eucalyptus etc and fuel and fodder. The forests prevent the silting up of the irrigation tanks, and fields, and the rapid draining of the rain water in to the sea and also have a little effect in increasing the rainfall. It is the duty of the Forest Department to guard this national wealth very jealously even as a faithful servant guards his master's property. It is the duty of the Department to see that the inevitable expenditure which the nation has to incur from this wealth, is recouped by fresh afforestation and that the wealth is added to, in accordance with the growing needs of the nation. It is also an onerous duty of which every one in the Department should be proud. lf this duty is to be properly discharged, it is not sufficient if a few officers at the top do their work well. Unless the large body of subordinates, the Watchers, Forest Guards, Rangers etc., give their cooperation, and work loyally and with enthusiasm, the work cannot be done. The work of the humblest watcher is as important in its own way as that of the Chief Conservator and the Watcher who does his work loyally and well is worthy of such respect as anyone else. It behoves all of us in the Department to realise these facts and work as one well - knit team, each doing the duties of his station with efficiency and enthusiasm.

3. It causes me much sorrow to hear complaints from several sides to the effect that individual officers of the Department here and there, so far from protecting and regenerating the forests, are actually in league with dishonest contractors and connive at the looting of the forests; and that some of them are even as audacious as thief; who when pursued by a crowd, cleverly mixed with them and began to search that such allegations are not true.

4. I have also heard allegations that the Rangers are not primarily to blame; that superior officers here and there suck supplies and "mamuls" from them more voraciously than a leech in the moist evergreen forests and that the poor Rangers have per force to pass on the 'bill ' (with additions) to the contractors who in tum 'recoupe' it (and more) from the forests at public expense. The presents are found to be charming and Ranger so-and-so is put down as a very decent man, but it is conveniently forgotten that independence and self-respect has been lost in the process and that many a forest tree will silently pay the penalty. I can only hope that such allegations are not true. Here I am reminded of the striking remarks of a District Forest Officer, made years ago;

> " I can not compare myself with a person who is richer than myself or gets more pay, and try to make money by evil means so as to emulate his standards. I rather compare myself with my Ranger and consider myself to be lucky. His pay is less, but his family burdens are no less than mine; and God is somehow going to solve them.
>
> Illgotten money causes more sorrow than happiness. Even if I escape departmental punishment and disgrace, the sense of guilt will pursue to the grave and beyond it. I have yet to see a corrupt officer who enjoyed mental happiness".
>
> When the tissue cells in a person's body rebel against the pattern of growth prescribed for them, the disease is called cancer and the person concerned detects them and has them destroyed so that he may live. When public servants run amok and make money against the rules, they become no less detectable in the eyes of the public.

5. The twin tasks of protection and regeneration that face the Department are formidable in magnitude and they will demand our very best efforts. But we have great possibilities in us, if only we try. We are descended from man to whose abilities the monuments from Tajmahal down to Rameshwaram temple bear witness. I appeal to every one in the Department to give of his very best in solving our problems.

Contributed by

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நமது வனம்
NAMATHU VANAM

Heera, the bold and beautiful leopard of Rajaji Tiger Reserve, Uttarakhand.

Photo courtesy: Sahil Rastogi.